

BLACKWATER BOTTOMLAND HARDWOODS (LOW SUBTYPE)

Concept: Blackwater Bottomland Hardwoods are forests of blackwater river terraces and floodplain ridges, generally dominated by wetland oaks and lacking a significant component of *Betula nigra* or *Planera aquatica*. The Low Subtype encompasses examples at intermediate local elevations, which have a significant component of *Quercus lyrata* and generally lack a significant component of either *Pinus taeda*, *Taxodium distichum*, or *Nyssa biflora*.

Distinguishing Features: Blackwater Bottomland Hardwoods are distinguished by dominance or codominance by bottomland oaks on blackwater river floodplains, in sites where overbank flooding is, or has been, a significant ecological influence. The Low Subtype is distinguished from the High Subtype and the Evergreen Subtype by having abundant *Quercus lyrata* or occasionally by being almost pure *Quercus laurifolia* without plants indicative of drier sites. It is distinguished from the Swamp Transition Subtype by having little or no *Nyssa biflora* and *Taxodium distichum*, by having an herb layer dominated by more mesophytic species than *Saururus cernuus*, and generally by a well-developed shrub layer. It is distinguished from Blackwater Levee/Bar Forest, which may contain *Quercus lyrata*, by lacking appreciable numbers of *Betula nigra* or *Planera aquatica*.

Synonyms: *Quercus laurifolia* - *Quercus lyrata* / *Carpinus caroliniana* - *Persea palustris* / *Vaccinium elliottii* Forest (CEGL004737).

Ecological Systems: Atlantic Coastal Plain Small Blackwater River Floodplain Forest (CES203.249).

Sites: Blackwater Bottomland Hardwoods occur on large blackwater river floodplains. The Low Subtype occurs at intermediate elevations relative to the river, on lower ridges or in lower parts of terraces. In contrast to brownwater rivers, where levee forests separate bottomland hardwoods from the river, Blackwater Bottomland Hardwoods often border the channel.

Soils: The Low Subtype generally has wet sandy alluvial soil that may be organic-rich. Johnston (Cumulic Humaquept) is the most frequently mapped soil series, but many examples are mapped as Muckalee (Typic Fluvaquent).

Hydrology: The Low Subtype is seasonally to frequently flooded. Flooding may last for significant periods but seldom through much of a growing season. Soils may also sometimes be saturated by floods that don't inundate them.

Vegetation: The Low Subtype is a forest dominated by *Quercus laurifolia* or *Quercus lyrata*, usually by both. *Acer rubrum* var. *trilobum* and *Liquidambar styraciflua* are frequent. Less frequent but characteristic species include *Carya aquatica* and *Ulmus americana*. The understory is frequently dominated by *Carpinus caroliniana* or *Acer rubrum* var. *trilobum*. *Ilex opaca* is frequently present but not usually dominant. *Persea palustris*, understory size *Cyrilla racemiflora*, *Crataegus* spp., *Diospyros virginiana*, or *Magnolia virginiana* may sometimes be abundant. The shrub layer is generally moderate or fairly dense. *Vaccinium elliottii* or *Ilex decidua* usually dominate. Other shrubs may include *Cyrilla racemiflora*, *Eubotrys racemosa*, *Vaccinium fuscum*, *Sabal minor*, and on the Lumber River, *Ditrysinia fruticosa*. Vines may be locally

abundant. *Muscadinia rotundifolia*, *Smilax rotundifolia*, *Smilax walteri*, *Smilax glauca*, *Campsis radicans*, *Berchemia scandens*, *Bignonia capreolata*, and *Thyrsanthella difforme* are all at least fairly frequent, and *Smilax laurifolia*, *Wisteria frutescens*, and *Gelsemium rankinii* sometimes occur. The herb layer is generally sparse. *Mitchella repens* or *Chasmanthium laxum* may dominate patches. *Boehmeria cylindrica*, *Mikania scandens*, and *Hypoxis curtisii* are fairly frequent, as are the epiphytes *Tillandsia usneoides* and *Pleopeltis michauxiana*. The latter sometimes forms extensive mats on spreading branches of oak trees in this community near the river, and these are occasionally habitat for the rare *Epidendrum conopseum*. *Dichantherium yadkinense*, other *Dichantherium* spp., *Centella asiatica*, *Pluchea camphorata*, *Hymenocallis crassifolia*, and, on the Waccamaw River, *Hymenocallis pygmaea* are other characteristic species, and species of wetter areas such as *Saururus cernuus* and various *Carex* species may be present in small numbers.

Range and Abundance: Ranked G4? but possibly rarer. In North Carolina, the Low Subtype occurs on all the large blackwater rivers and is an important part of the floodplain mosaic of communities. It occurs in South Carolina but the synonymized NVC association has not been attributed to any other states.

Associations and Patterns: The Low Subtype occurs as part of a floodplain mosaic with other subtypes and with Cypress–Gum Swamp. Conceptually it falls between the High or Evergreen Subtype and the Swamp Transition Subtype but well-developed patches of these are often not present adjacent to it.

Variation: No variants are recognized. Variation within a site often is greater than among sites. More systematic differences should be sought between the occurrences on the Waccamaw River and those on the other rivers.

Dynamics: Dynamics are similar to other floodplain forests.

Comments: *Quercus laurifolia* / *Carpinus caroliniana* / *Justicia ovata* Forest (CEGL07348) is an association of low blackwater bottomland hardwoods that has been attributed to North Carolina. It appears to be more similar to the Swamp Transition Subtype.

Rare species:

Vascular plants: *Ditrysinia fruticosa*, *Hymenocallis pygmaea*, and *Rhynchospora decurrens*.

Vertebrate animals: *Corynorhinus rafinesquii macrotis* and other bats.

References: